

# New Generation of GaN based SSPAs/BUCs for lunar communication



USING CUTTING-EDGE GaN TECHNOLOGY, THE NEW K SSPA FAMILY OFFERS OUTSTANDING PERFORMANCE IN INDOOR OPERATIONS

## Innovative technology

State-of-the-art technology offering outstanding performance in a compact packaging.

## Modularity

A combination in phase of SSPAs 500 W delivers output powers up to a few kW on a built-in redundancy and hot swappable amplification modules.

## Efficiency & Reliability

Super linearity for maximum useable output power to provide customised linearisation independent of the modulation method used.

Robust performance guaranteed through individual unit testing over temperature at factory. Built-in output isolator for protection against reflected power.

## Monitoring & Control

Full M&C capability through RS-485/USB (ASCII commands) and an Ethernet port (Telnet, HTTP with embedded user-friendly web page or SNMP).

Discrete lines for mute and turn on/off functions and a summary alarm (Form C relay and discrete) for speedy operation.

## Key Features

- \* Highly efficient
- \* Super high linear power
- \* Multicarrier operation
- \* Superior lifetime based on GaN-tech
- \* High MTBF
- \* Redundant configurations (1:1, 2:1, N:1)
- \* Simple operation & maintenance
- \* Liquid cooled
- \* Rack mounting



**OTHER FEATURES**

- \* Automatic Control Mode: AGC, ALC
- \* Output RF calibrated sample port
- \* Ethernet
- \* Harmonic filter

**OPTIONS**

- \* Redundant systems 1:1, 2:1, N:1
- \* SNMP
- \* Receive reject filter (external)
- \* Breaker panel

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Information contained in this document is subject to change without notice.

Unless otherwise specifications, tests have been done at 23 °C.

 **RF performance**

Operating frequency range	22.55-23.15 GHz
Output power ( $P_{SAT}$ (typical))	250 W / 500 W 54 dBm / 57 dBm
Linear output power ( $P_{LINEAR}$ )	250 W / 500 W 51 dBm / 54 dBm
Gain	55 to 75 dB
Gain flatness	2 dB p-p max over full band; 1 dB p-p max over any 40 MHz
Gain variation over temperature	± 1 dB over full operating range
Attenuation adjustment range	20 dB 0.1 dB step
Input VSWR	≤1.5:1
Output VSWR	≤1.3:1
Spectral regrowth	-30 dBc @ $P_{LINEAR}$ *
IM3	-25 dBc @ $P_{LINEAR}$ *
Spurious	-60 dBc max @ $P_{LINEAR}$ *

\* According to MIL-STD-188-164C: For single carrier with modulation DVB-S, 4Mbaud, Roll-off: 0.25, ModCod QPSK-3/4, Occupied Bandwidth 5 MHz, Measured @1.0x symbol rate. For two equal amplitude CW carriers (5 MHz apart), when any individual intermodulation product power is -25 dB relative to the combined power of the two CW carriers.

 **Power Supply**

Power supply module	1RU 19" subrack: AC/DC converters (qty 2) hot-swappable working in redundancy
Input voltage	90-264 VAC, 50-60 Hz
Power consumption @ $P_{SAT}$	250 W / 500 W <2000 W / <3500 W

 **Interfaces & Physical**

Dimensions (W x H x D)	250 W / 500 W 483 x 133 x 556 mm / 483 x 133 x 730 mm (TBC) - 3RU 19" subrack
Weight	250 W / 500 W 24 Kg / 35 Kg
Interfaces	RF input: SMA (f) RF output: WR42 grooved RF sample: SMA (f) AC line: IEC320 M&C: DB15 (f) / DB9 (f) for inhibit switch signal / Ethernet port Liquid cooling interface: quick connect coupling connectors
Coolant (liquid)	Fluid: water glycol mixture Inlet temperature: 20 °C to 30 °C Inlet pressure: < 5 bar Flow rate: 14 l/min (500W) / 6 l/min (250W)

 **Monitor & Control**

Remote control	RS-485 / USB / Ethernet
Monitor parameters	Forward & Reverse output power / Input power / Temperature / Summary alarms
Internal self protection	Temperature / Reflected power / High output power

 **Environmental**

Operating temperature	+10 °C to +50 °C
Storage temperature	-40 °C to +85 °C